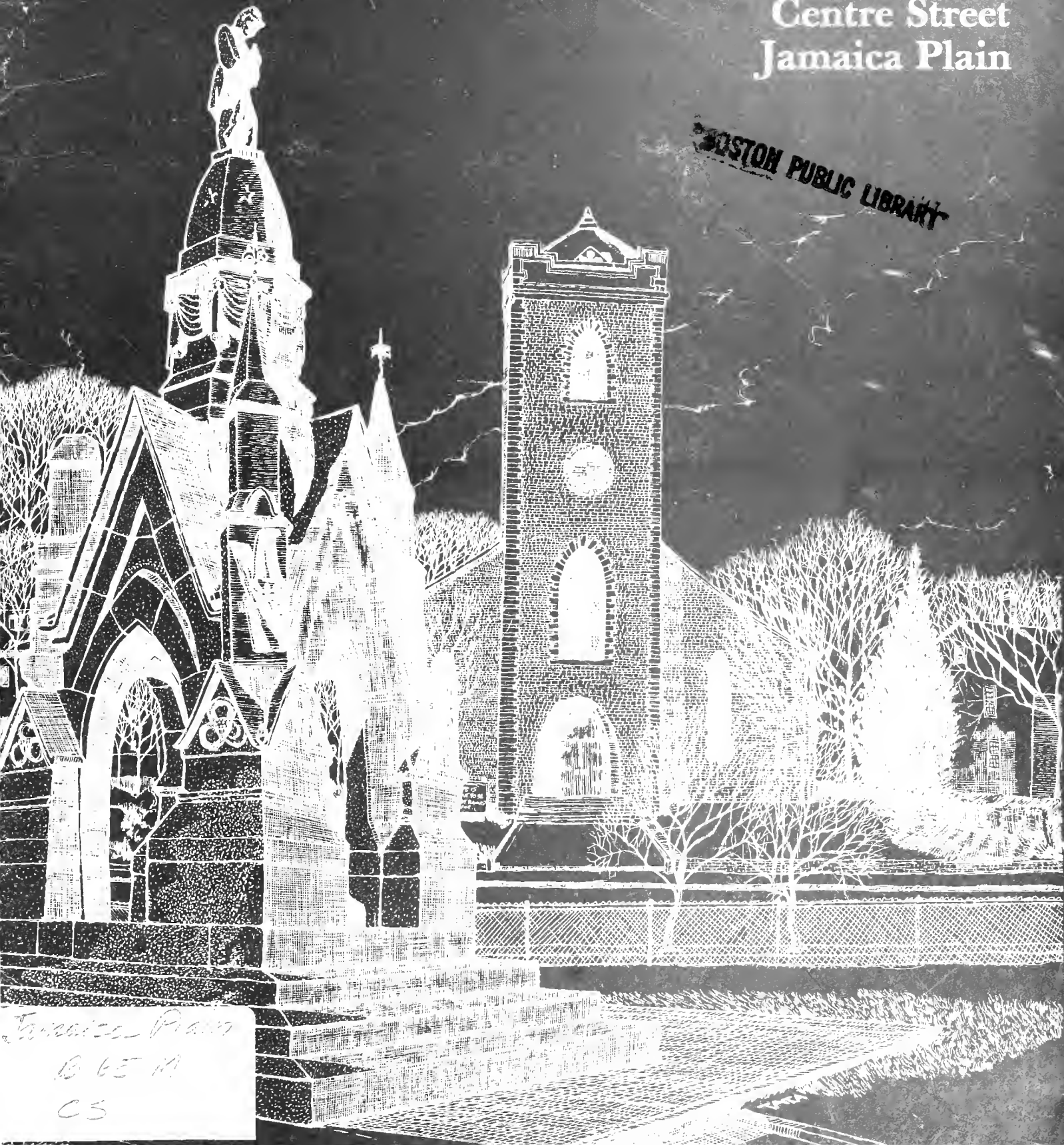


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Design Guidelines
for Commercial Property Improvement

Centre Street
Jamaica Plain

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City of Boston
Kevin H. White, Mayor
1980

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Centre Street Jamaica Plain

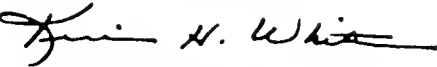
Design Guidelines for Commercial Property Improvement

Boston has reached a new stage in its renaissance as one of America's most livable cities. Its downtown skyline has been transformed through more than a decade of unprecedented office and retail growth. Its neighborhoods have been strengthened by an infusion of public and private investment in housing rehabilitation, street lights, and other public facilities and improvements.

This renewed urban vitality will prove increasingly valuable for Boston's neighborhood business districts. The customer market is again growing, as long time residents — reassured of the benefits of city living — are here to stay. And joining them are a whole generation of homebuyers, attracted by the affordability of the city's housing and individuality of its neighborhoods.

The economics of energy also favor neighborhood business districts. Skyrocketing fuel costs are making local shopping more attractive than ever and are helping to make the conservation and rehabilitation of the business districts' older commercial buildings one of the best bargains around.

For an owner of a neighborhood business or commercial property, there has never been a better time to invest in Boston.



Kevin H. White, Mayor
City of Boston

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Introduction



To the visitor, Boston's image is one of winding streets, apartments tucked into unexpected alleys, and small shopping areas which appear from nowhere. But to the people who live here, Boston is a city rich in neighborhood substructure, lending order to the whole and giving the city its manageable and intimate quality.

Over the past five years, new patterns of investment have blossomed in Boston's neighborhoods, resulting in greater stability and renewed optimism. Young homebuyers impressed by the assets of older neighborhoods, have been choosing a house in the city over the suburban dream home. These new residents are in turn investing heavily in fixing up and maintaining their newly acquired property.

Long-time residents — reassured by their new neighbors and further convinced by the city's major investments in housing programs, streets, sidewalks, lighting and community facilities — are also making financial commitments to stay.

For both current and potential residents perceptions of city neighborhoods are heavily influenced by the commercial areas which occupy focal positions in the community. Often, the first thing an outsider sees upon entering a neighborhood is the business district. First impressions tend to stick, however rehabilitated the housing stock or restored the tot lots may be.

If the commercial area has a negative visual image the result can be confusing with the business district appearing to decline while nearby residential areas enjoy a fast-paced resurgence.

Attractive and well-designed signs, enticing window displays and consistency along the street can go a long way in turning around some of the psychological assumptions potential shoppers may harbor about a business area.

The Design Guidelines contained in this booklet are intended to provide assistance to the individual merchant or property owner who wishes to improve and build upon one of the best assets his or her business district has — the special character of its street and shops — thereby creating a more favorable climate for increased retail trade.

The guidelines were developed during the fall of 1979 by a group of Centre Street merchants, property owners and residents, working with City of Boston staff and local architects.

Early meetings of the group focused on a general review of the options available to a shopkeeper wishing to renovate a building. Slideshows of storefront improvements around Boston showed some of the possibilities. Photos of storefronts in Centre Street itself helped people both identify their own needs and begin to set design criteria for the local business area. This working team — called the Centre Street Design Advisory Group — was composed of six community members, three business people and three residents.

If merchants and property owners look to these guidelines when making their renovation decisions, the results can be an exciting and quantifiable boost to the business area and the community. A coordinated appearance makes a statement of confidence and provides visible proof of merchants, property owners, residents and the city working together.

Revitalization Approaches



Removal

3

The design guidelines described later in this booklet are based on three principles.

First, deterioration and irreversible damage should be prevented. That is, the basic materials of a building should be well maintained and, if necessary, repaired to prevent any decay. For instance, roof leaks should be repaired to prevent rotting in the framework, there should be adequate drainage around the foundation to prevent failure at the base of a building, and broken windows should be replaced to prevent water damage and deter vandalism.

Second, the function of a building should be improved. Obsolete structures or signs should be removed, electrical and mechanical systems should be updated when necessary and lighting and hardware for security or handicapped use should be installed as needed.

The third principle is to improve the appearance of a building. In some cases this involves preserving the qualities that make a particular building special, such as well-crafted or historic detailing. In others it calls for replacing a confusing array of signs with a single message to simplify choices for the shopper. The scope of work may vary from replacing loose mortar in masonry walls to construction of a new storefront.

Rehabilitation can result in not only increased property values, but also more business. Regular customers, noticing the changes, feel that a merchant cares about making their shopping more pleasant and comfortable. New customers will be encouraged to stop in and survey the merchandise. And as an added incentive, a single well executed renovation project can frequently be the catalyst for similar work along the street.

For many people, the idea of building renovation conjures up overwhelming images of disrupted business, chaos, and heavy bills. Yet the truth is not every building needs major work, and even minor repairs can sometimes make a big difference. Therefore, the purpose of these guidelines is to describe a range of options an owner or merchant has in improving their Centre Street property.

The simplest form of property improvement is to remove obsolete or unwanted elements. These may range from trash around the building to equipment left by previous tenants. Allowing old signs, hardware and frames to remain bewilders customers, overloads their capacity to receive information, and detracts from the primary message of the store display.

Since most removal work can be done without the help of professionals, this can be a low-cost and easily performed part of a building improvement program.

- Trash littering the ground around the store should be removed.
- Weeds growing between bricks or cracks in the pavement should be removed.
- Old and outdated signs, along with hardware and frames, should be dismantled.
- Hardware from broken awnings and security grilles should be removed when these are no longer used.

Approaches



Repair and Maintenance

A good maintenance program will extend the life of a building, save money in the long run and contribute to the continued vitality of a neighborhood.

- The roof, gutters and downspouts and foundation walls should be checked for leaks.
- Walls around windows, porches or fire escapes, and seams within exterior paneling, siding or brick facades should be checked.
- When moving into a new space or adding new equipment, the heating, ventilating, air conditioning and electrical systems should be checked and upgraded as necessary.
- Wood siding and trim should be scraped, cleaned, painted or stained regularly.
- Broken bricks should be replaced and masonry repointed as the mortar crumbles.
- Stucco should be patched and painted. When necessary a wall should be restuccoed.
- Windows should be checked to see if rehanging, sealing, caulking or replacing is required.
- Wood clapboards or shingles should be cleaned, repaired, replaced or painted
- Original decorative elements such as column capitals; cornice moldings and brackets, and moldings around doors, windows and signs should be repaired and accentuated.
- As lightbulbs burn out, they should be replaced.
- Windows should be cleaned regularly.
- Signs should be cleaned, repainted or repaired as necessary.
- Displays and advertising should be changed or updated regularly.
- As awnings rip they should be patched or replaced.
- Door hardware should be maintained in good working order.

Approaches



Renovation and Reconstruction

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Renovation involves a general upgrading of a building's external appearance. It can consist of accentuating the existing features of the building through painting, replacement, or other treatment; the addition of design elements which may or may not have appeared on the original building but which are in keeping with the building's character, and a general revamping of signage.

Renovation should not be confused with restoration or historic preservation, in which meticulous care is taken to return a building to the design and condition in which it existed at a particular point in time. Rather, renovation is a contemporary solution which emphasizes long-term, yet economical, improvements. It respects the architectural features which enhance the building and removes those — such as “false fronts” — that detract or conceal it. The height, width, original proportions, construction materials, textures, lines and width of an existing building are some of the factors which must be taken into account prior to starting a renovation project. Also, old photographs, if available, can be very helpful in assessing the building's potential and making decisions about the type of changes to undertake.

- Buildings which are historic or old but in excellent condition should be restored rather than modernized.

- When restoring an older building new walls should be built of traditional materials such as brick, stone or wood.
- Signs should be located in the panels or bands provided for them in the facade of older buildings.
- Historic details should be repaired or rebuilt.
- New features should be either simple enough to accentuate historic details, or modeled after the details of the original period.
- New additions and details should be matched with the existing building. Take into account the existing details and the period in which the building was constructed.
- The number of different colors and materials on a building should be limited.
- Sign materials, colors, locations and typeface should be unified across a building facade.
- Shops housed in the same building should be unified with similar awnings, plantings, lighting and siding.
- Bright and bold graphics may be used to give a modern feel to a building.
- Let the different functions in a building be expressed on the facade — residential, commercial and office areas should be clearly differentiated.

Approaches



New Construction

The following design principles apply when a building's use is changed drastically, when an addition is built onto an existing structure or when a new building is constructed on a vacant lot.

When a gas station is converted to a florist shop, or a factory is converted into housing, the appearance of the building should reflect this change in function. For instance, a florist shop should have an airy feeling, with lots of light, large expanses of glass and natural materials and colors. In housing we expect to see incandescent lighting, residential type landscaping and windows small enough for privacy and low enough for occupants to see out.

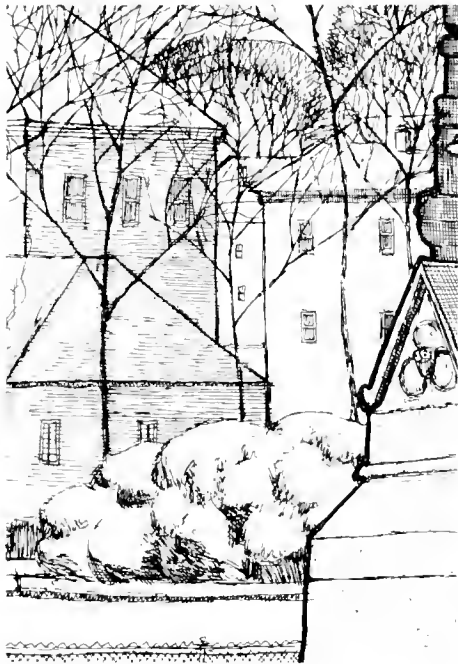
An addition should be compatible with the original building. The scale, texture and materials should be similar.

A new building also should fit into its surroundings. Otherwise it may look awkward and disrupt the rhythm of the streetscape.

Construction plans should reflect a balance between the existing architecture on the street and good contemporary design. This is most easily accomplished by taking into account the materials (e.g., brick, wood); features (e.g., arched windows, columns), and scale (e.g., number of stories, size and spacing of windows) of adjacent buildings.

- The appearance of a building should be changed when its function changes significantly.
- New additions should be matched to the existing building.
- New buildings should be designed to complement or blend into the neighborhood.

Blocks, Buildings and Storefronts



Blocks, Buildings and Storefronts

While the quality of streets, sidewalks and other public places is primarily the concern of the municipal government, responsibility for the quality and character of structures and shops falls to private building owners and occupants. Storefronts, signing, hardware and displays all contribute significantly to the atmosphere of the street. When the design and treatment of a building and its shops responds to the character of the surrounding structures, the result can be a consistent, comfortable and coordinated appearance. Where property is improved or changed and the adjacent built environment ignored, the entire street suffers.

The cooperation of merchants and property owners on the street in making design and renovation decisions does not necessarily mean restraint. Creative and individual variations on property improvements, storefronts and signing can be easily developed within the framework of working together.

The intent of these guidelines is to help create a visual continuity on the street while maintaining and emphasizing the individuality of each shop. With as many property owners and merchants participating as possible, the Centre Street business area can develop the type of image necessary to effectively compete with other shopping areas.



Blocks

Commercial streets have the standard components of an urban environment: rows of buildings on both sides of the street, traffic and parking lanes and a scattering of street furnishings. The most commanding portion of this scene is the block of commercial structures.

They form a wall — an edge — that defines the limits of the street. That wall is a composite of solid and voids. There is a pattern of windows and doors on the street, and the visual continuity of the street is increased or diminished by the strength of this pattern. It is possible to maintain the identity of each building and business while reinforcing this continuity.

- The proportions of existing facades should be respected. New construction and facade renovations must fit within the building frame and repeat the rhythms that already exist in the facade windows and openings.
- Materials already employed in the block should be used when possible. Brick and concrete as well as wood, marble and concrete block establish the vocabulary of building materials.

- Signs should be mounted to establish lines along the block. Where a natural sign band exists on a building facade (such as those created by cornices above storefronts) this must be the primary determinant of sign position. Where a band does not occur on a building, signs should be positioned on building faces so that they align with others in the block.

Blocks, Buildings and Storefronts



Buildings

Though the unique visual identity of the shopping district is based on a unity of design, unity should not lead to a sterile sameness of all the buildings. Thoughtfully executed building renovations can reflect both individuality and a respect for continuity along the street.

The assets of the existing building facade should be used to the greatest advantage. The design must integrate the pieces of the facade into a strong composition. The best approach is to remove conflicting attachments and modifications and to reinforce the original style of the building. Successive remodelings of some structures will have added layers of material to the facade. These sheathings should be removed.

- The basic form of the building should be taken into account. The form or shape of the building is the background for the details of the facade. These details include windows, shop entrances or special decorations. Ground floors can be made to relate to upper floors by aligning openings on the first floor with the second floor windows.
- Original materials should be used when possible, or new materials selected that are compatible with the existing ones. Much of the visual interest and character of a building is expressed in the original materials.

- Existing decorations should be maintained during facade renovations. With many building styles, it is appropriate to accentuate decorative elements with paint colors that contrast with the background.
- An attempt to make a building look older than it is should not be a part of a renovation plan. Most reproduced details are made at an improper scale and their application to a facade results in an awkward visual effect.

Blocks, Buildings and Storefronts



Storefronts

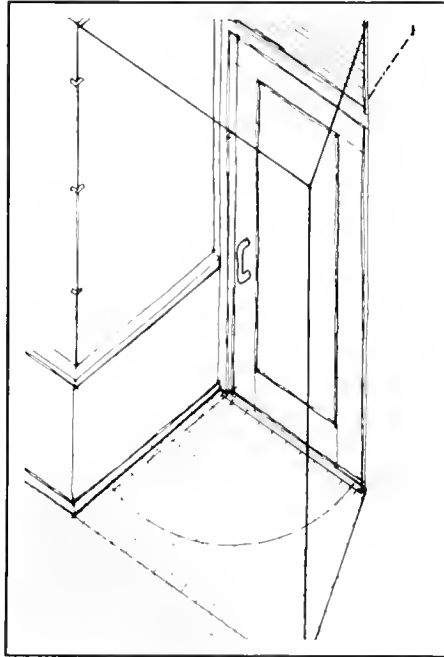
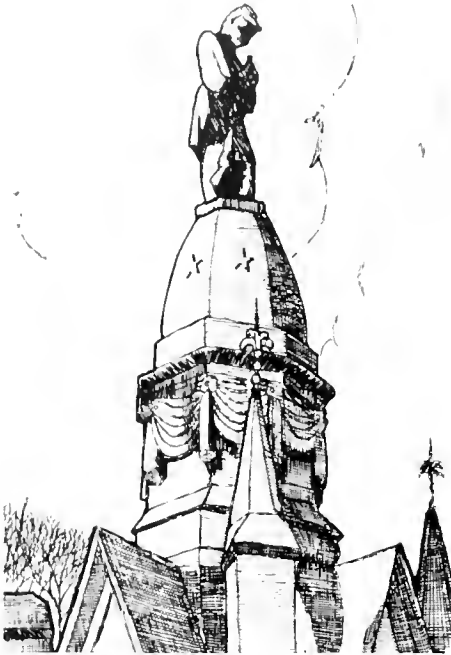
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It is important to plan your storefront design carefully to clearly reflect the product or service being offered inside. This communication can be accomplished with signs, logos, symbols, displays and the use of exterior surface materials and colors.

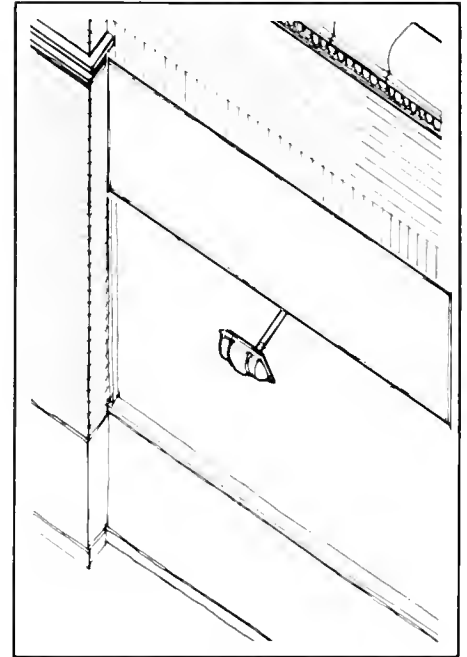
Former tenants may have made alterations to your building — such as closing off windows — which limit your possibilities. You may have to remove walls or strip materials to get the effect appropriate for your business.

- A storefront's original design is usually the best blueprint for a renovation project. A facade's original elements should be identified and conformed to when designing a storefront.
- The use of smaller elements such as signs, awnings, symbols and window boxes should be considered to express the nature of a business and identity of the owner.
- In designing the sign itself, a premium should be placed on simplicity and directness of message. Graphic symbols or simple verbal messages are most effective.
- Temporary paper signs should be kept to a minimum and removed when outdated.

Design Guidelines



Doors and Entrances



Facade Lighting

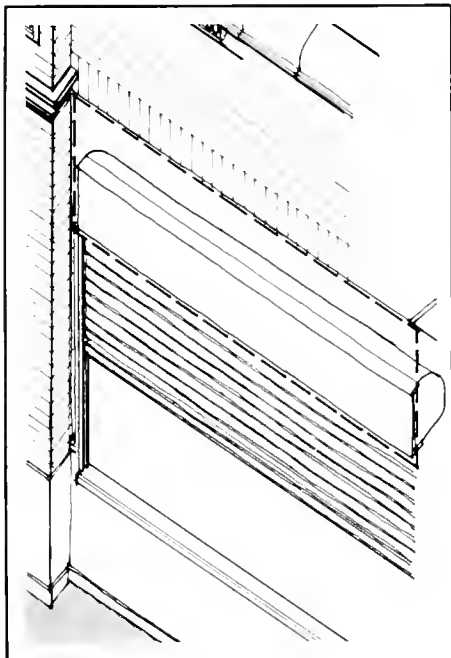
Most of the doors to shops in Centre Street are standard aluminum and glass doors which have replaced wooden doors in the course of past remodeling efforts, although wooden doors are still common. During remodeling, doors should be selected to harmonize with the building facade. Avoid conflicts of style: a "colonial" door should not be added to a twentieth century masonry building.

During facade renovations, **original wooden "storefront" doors should be retained by repair and refinishing.** Aluminum doors should, like window frames, be chosen to work with the color of building materials. **Dark finishes (black, bronze, grey, brown) with brick and dark materials, "silver" and bright finishes with tile and glossy materials and either finish with concrete buildings may be used.**

New doorways should be in a recessed entranceway. This forms a protected area for customers between inside and outside. It also adds interest to the street and allows more viewing of display windows.

Store facades do not need separate lighting. At night, display windows should be lit from within. This makes the merchandise display a form of store advertising and adds light and interest to the sidewalk. **Any facade lighting should be restricted to the building sign, the light that comes from street fixtures, and internal display and window lighting.**

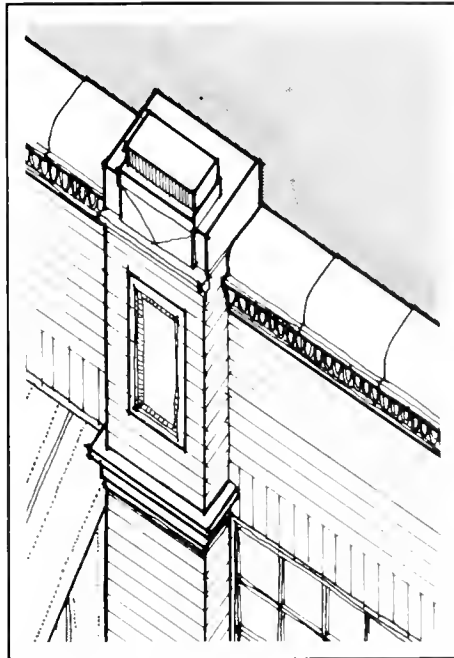
Design Guidelines



Security

Security is a major concern of most Centre Street merchants. Vandalism and theft are the primary problems facing store owners. The most effective solution to these problems is the installation of moveable grilles on the storefront, either the type that roll down from above, or the accordian type which folds to the side.

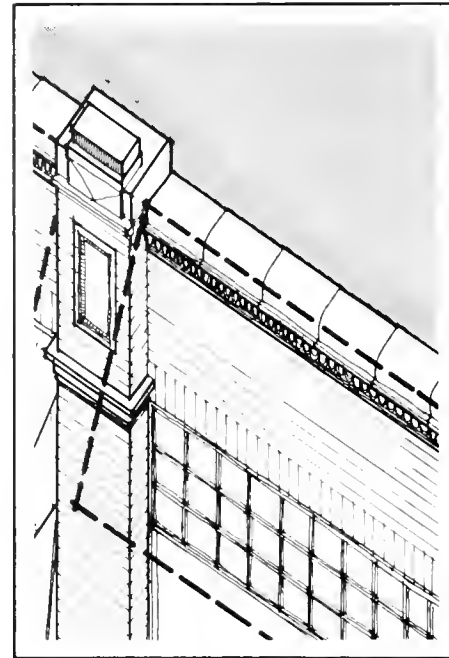
If security grilles are installed as part of a new storefront, they **must be incorporated into the store design and not simply attached to the surface**. Roll down open grilles are preferred because they allow store displays and the store interior to be seen from the street. Accordian screens must be concealed from sight when not in use, and the use of solid type roll down grilles is discouraged. If selected, they should be painted to improve their appearance when in use. **Permanently attached grilles, wire mesh screens or demountable screens and grilles should be avoided.**



Decorative Details

Most commercial facades have some decorative architectural details. Some occur over the entire length of the block, establishing an architectural continuity. This continuity is defined by a uniform molding or coping line, decorative details or by columns and piers which give rhythm and scale to the storefront of a building. Some of these architectural details have been covered with false roof fronts or large sign panels. Such additions destroy the architectural continuity of the building and detract from the quality of the streetscape. Details and ornamentation are a vital part of the commercial area's visual character and should not be destroyed during renovation.

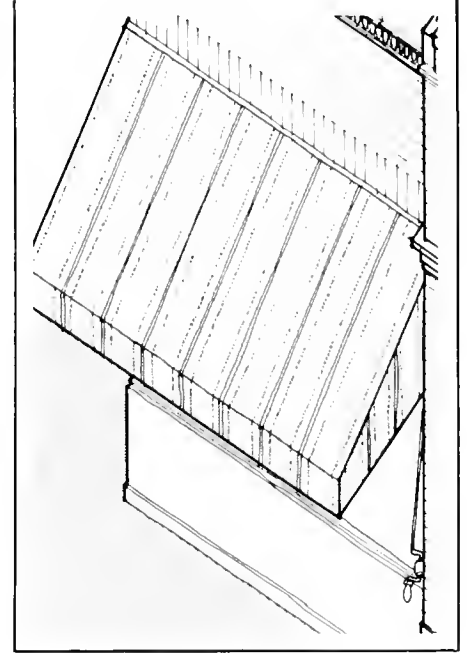
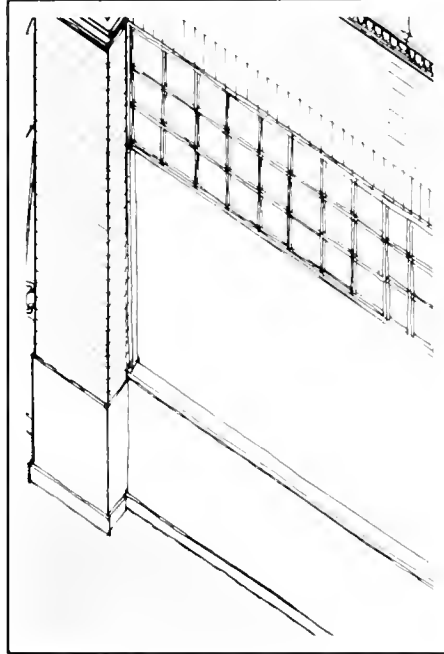
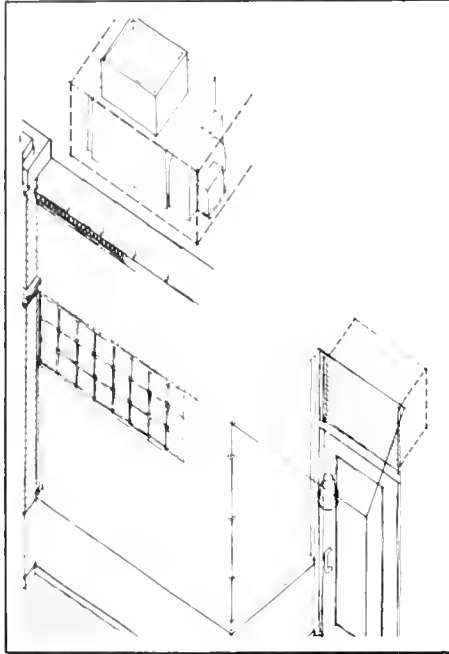
Architectural details of the building frame must be retained and enhanced during facade renovations. New storefronts and signs must not cover significant building detailing. If a detail cannot be maintained or repaired in its original form, it can be modified or simplified to match the original in size and appearance without disturbing the character of the building and storefront.



Roofs and Cornices

Most one and two story commercial roofs are flat and not visible from the sidewalk and street. Remodelings have introduced **flat fascia panels as well as pitched and Mansard roofs** which disrupt an otherwise unified facade appearance. **This type of treatment should be avoided.** Likewise, the addition of imitation "colonial" pediments to existing cornices and roof lines should be avoided. By revealing the original roof and cornice lines, rather than concealing them, improvements can restore the unity of the facade and relate it to the surrounding commercial environment. Cornices are often elaborately ornamental and detailed, emphasizing the horizontal continuity of the street as well as providing a termination to building facades. Most cornices will remain in sound condition with little maintenance. **Wooden, brick, metal or softstone cornices must be periodically repaired, patched and painted.** Missing details should be replaced during renovation.

Design Guidelines



12 Building Equipment

Air conditioning units protruding from windows and supported by brackets obscure attractive facades. They are also noisy, and have a tendency to drip on pedestrians and customers passing below. Air conditioning units should be placed on rear and side facades when possible. **If the addition of an air conditioner unit to the street facade is unavoidable, it must be mounted flush with the exterior wall surface.** A drain must be installed to properly carry condensed water away from the unit to the ground.

Rooftop mechanical equipment should be lowered beneath the parapet line or must be screened and painted with a color that blends with the roofscape.

Street numbers for entrance doors are a small and inexpensive detail that must be included in any facade improvement. At the least, the street address should be located on the main entrance door.

Numbers should be in a simple, legible style and can either be painted on or adhered directly on the glass. Fancy styles or script numbering are not allowed.

Windows

The windows of retail stores vary in size and shape depending on the nature of the business as well as the architectural style. Large plate glass windows are indigenous to stores and small mullioned windows are characteristic of taverns.

When designing new window treatments, **it is important to relate the proposed design to the facade of the whole block.** Colonial windows with small frames, however attractive, can disrupt the continuity of a block facade which is entirely composed of large plate glass windows.

When choosing wooden or aluminum replacement window frames, pay special attention to their color and finish. Select colored trims to work with the building details. **Dark finishes (black, bronze, grey, brown) should be used with brick and dark materials, "silver" and shiny finishes should be used with tile and glossy materials. Either color frame can be used with concrete buildings.**

Pay attention to the size of replacement windows; stock sizes are not appropriate for renovation if they do not match the original sizes and shapes of the building. **Blocking down or filling in older openings to fit standard size sashes must be avoided.**

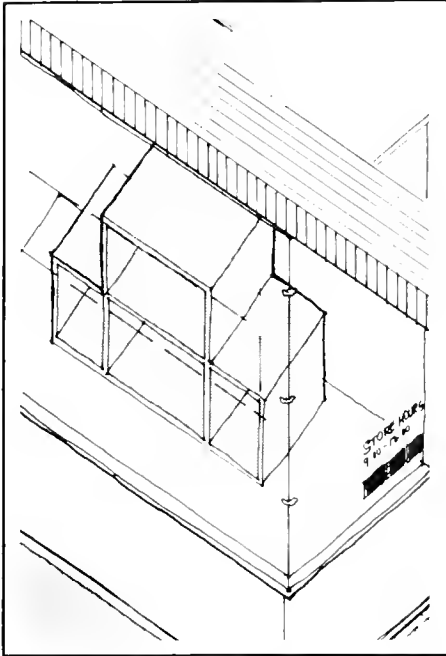
Awnings

Awnings and canopies have been traditionally used in urban areas to give protection from the weather, as well as to protect window merchandise from the sun. In addition, awnings and canopies can provide color and a three-dimensional appearance to a facade. Printed with the name and street number of the store and properly designed and maintained, they can add to the character of the street and commercial area.

Heavy canvas should be used for all awnings and canopies, and should be replaced when weathered, faded or damaged. Aluminum and plastic canopies should not be used.

To extend their useful life, awnings should be of the retractable type to avoid possible damage through vandalism and other causes.

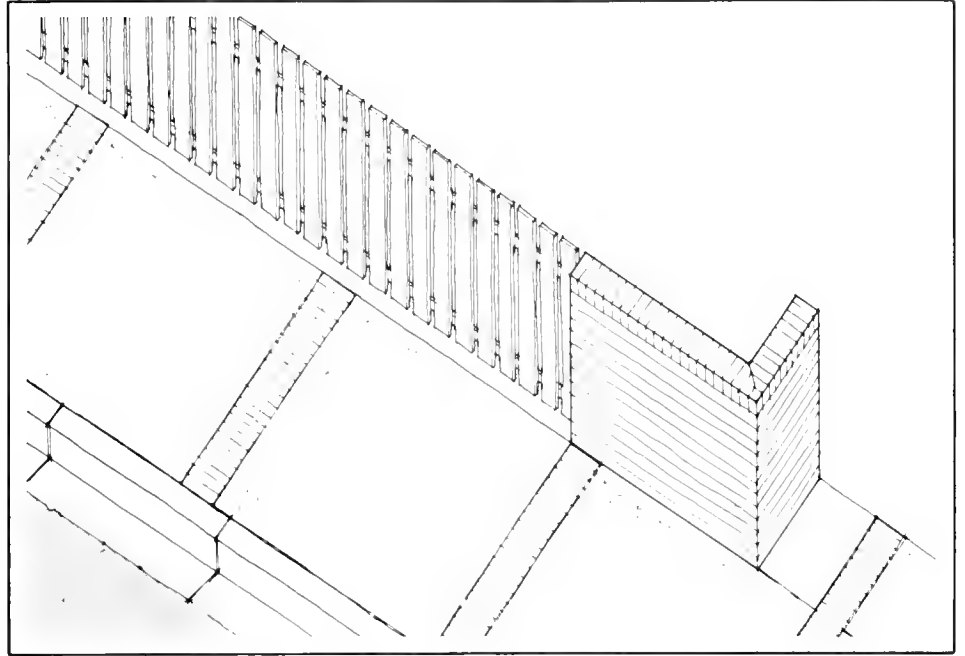
Design Guidelines



Window Displays

Window displays are an important part of the overall visual appearance of shops and storefronts. An interesting display of merchandise arranged to be seen by passing pedestrians, and an open view to the store itself, can act as its own advertisement. Displays can be organized by using large items of merchandise, or through a system of shelves and display boxes for smaller items.

Information such as store hours, credit cards accepted, parking information, etc., should be clearly organized in one area near the store entrance. A disorganized display of temporary paper signs gives a sloppy impression when attached to the inside of a store window. Special sale announcements should be displayed in a balanced way, and should be removed when the sale is over. Temporary posters announcing community events should be arranged neatly in one area and removed as soon as the date has passed.



Landscaping and Sitework

Individual site elements such as planting, paving, curbing, fencing, etc. can contribute significantly to the visual quality of a building and its surroundings.

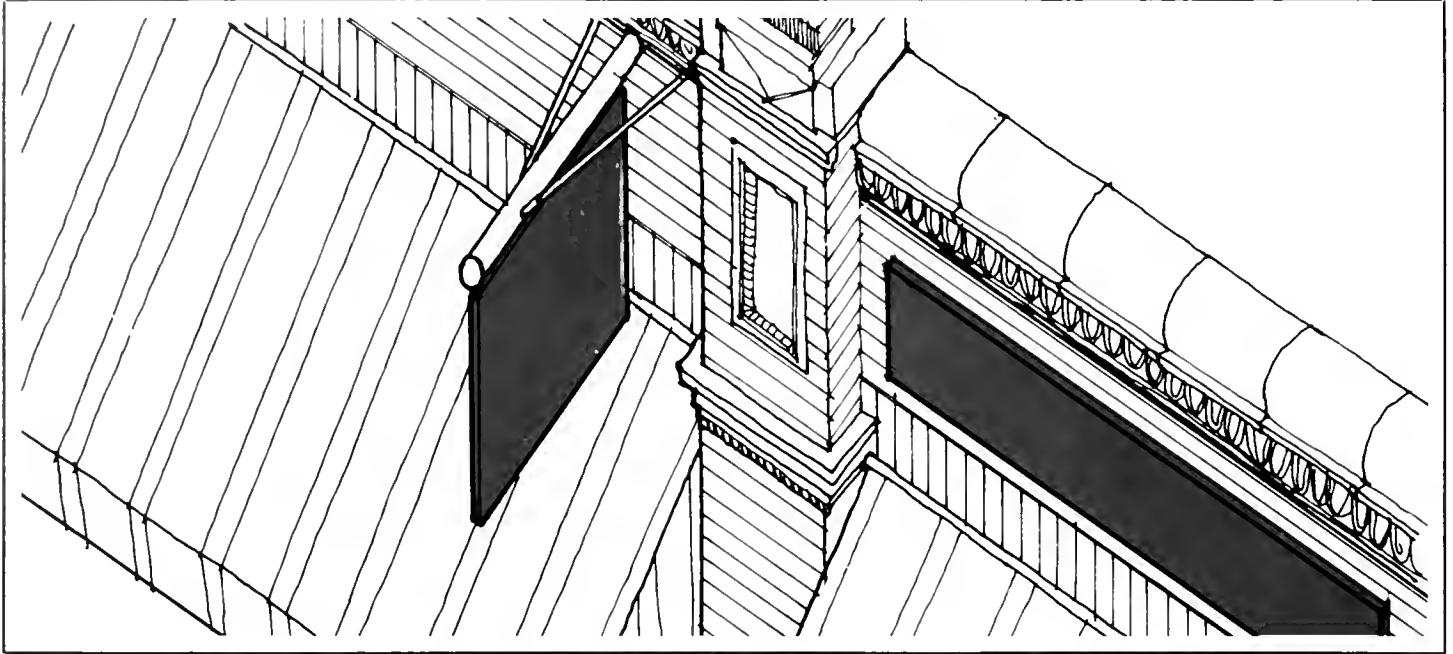
Concrete and asphalt are the most common paving materials. Although they are suitable for many conditions, large uninterrupted areas of these materials should be avoided when possible. Traditional paving materials such as brick, or granite pavers, offer rich textures and natural tones which blend well with the Centre Street Business District. These traditional materials should be used whenever possible.

Walls and fences have always been important streetscape elements. Large paved areas for off-street parking should be visually screened from the street by walls, fences or plantings. Natural stone or brick walls work well, as do painted wood board or picket fences. Unless they can be concealed by plantings, concrete block walls, chain link fences and natural wood board or split rail fences should be avoided wherever possible.

Trees, shrubs, flowers and grass have a strong visual impact upon a building. Plantings can offer shade and/or privacy, while adding color and texture to the area. If trees or large shrubs are to be planted, they should be located with their ultimate size in mind. Plantings should be considered as

building elements to be balanced and proportioned in accordance with the building they surround. Special opportunities for other plantings also exist. Where the sidewalk is wide, or a building is set back, plant beds or boxes can be installed. Window boxes provide an additional opportunity for color and should be considered as well. A landscape architect or a local nursery will be able to provide additional information on site improvements.

Design Guidelines



14 Signs

All storefront signs in Centre Street should conform to the Boston Sign Code.

The following are the major points and limits of this code:

- Signs may include only the street number, the name and kinds of business, service or facility conducted on the premises, the year the business was established, a slogan, the hours of operation, time and temperature and lettering that is part of a trademark.
- Trademarks are limited to no more than 25% of the area of a sign face.
- Any lighting must be continuous, no flashing or blinking lights are permitted.
- All signs must be stationary.
- No signs may extend above the cornice line of the building.
- Projecting signs cannot exceed 24 square feet on a side, cannot have exposed guy wires or turnbuckles and the bottom of the sign must be at least 10 feet above the ground (any sign projecting more than 12 inches over a public way requires a permit from the Boston Public Improvement Commission, and is taxable).
- Signs attached parallel to a building can project no more than 15 inches from the building surface.
- The top of any sign can be no higher than either 25 feet above grade, the top of sills

of the first level of windows above the first story, the lowest point of the roof, or the top of the parapet of one story buildings, whichever is lowest.

- Permanent signs on the inside of a window cannot exceed 30% of the total glass area.
- The total area of all signs cannot exceed either 50 square feet or the length of the building's street frontage multiplied by 2 square feet, whichever is greatest.

In addition to the requirements of the Boston City Sign Code, the Design Advisory Group has established the following standards:

- The sign should fit within the lines and panels of the storefront as defined by the building frame and architectural detailing. Signs should be placed where it respects an existing sign line established by the signs on adjacent stores in the same block.
- Signs should work with the materials of the facade. They should be maintained easily and capable of withstanding climatic variations. Painted wood or metal is the preferred background, and letters may be painted, carved into wood, or individually mounted. Plastic may be used if it is carefully designed and is fabricated with another finish.

- Mass-produced plastic signs convey a powerful corporate image and are inappropriate to the shopping street.
- Indirect light should be used to illuminate the signs, and to draw attention to the surrounding facade. Use incandescent rather than fluorescent light sources for a truer color rendition.
- Colors should be limited in number and should complement the colors used in the rest of the facade. Avoid glossy backgrounds as they reflect glare and reduce legibility. Signs directed toward pedestrians can make use of subtle color relationships, shading, outlining, and decorative borders.

Design Guidelines



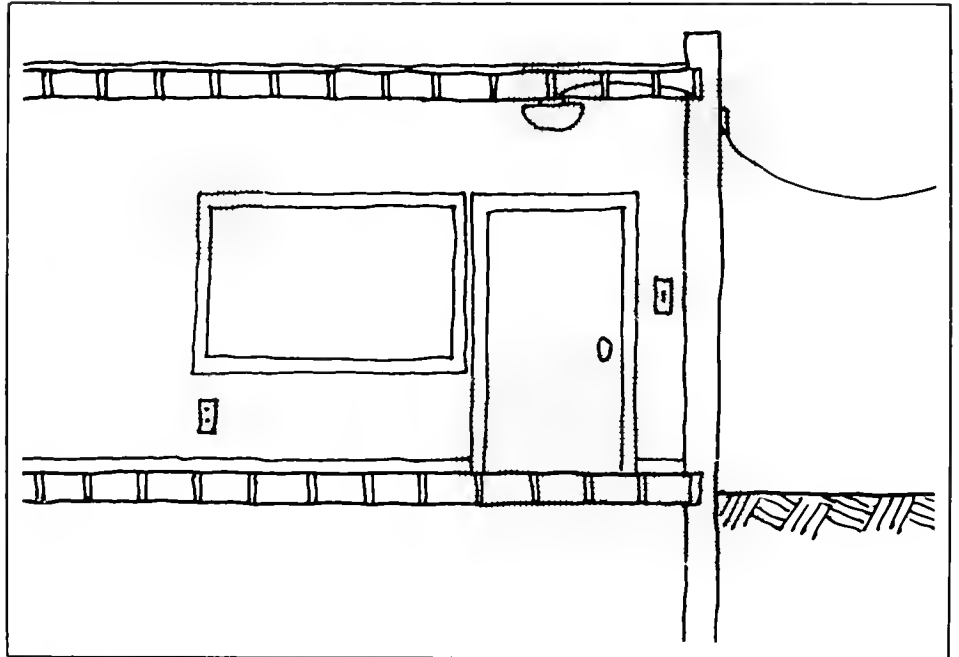
Color

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Color schemes should be chosen to convey the building as a unified facade. Care should be exercised to coordinate the colors of upper stories with the street level storefront. **The predominate material in the commercial area are brick and light aggregate concrete.** Color schemes that will harmonize with these materials should be used.

In choosing base and trim colors, select the base color of the walls first, then select the trim shades. Accents of contrasting colors can be used to highlight specific architectural details and as an element of interest on a facade.

Energy Conservation



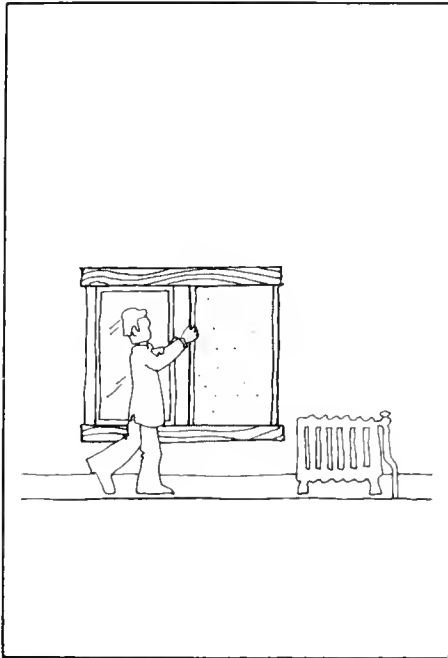
Reduce Heat Loss and Infiltration

A good program of energy conservation can be a simple or a complex undertaking. Modest improvements are often the most cost-effective and can be made without the help of outside professionals.

Infiltration occurs as air escapes through cracks and openings. In a poorly insulated building up to 35% of heat generated is lost through doors and windows.

- Small cracks around window and door frames should be recaulked.
- Special felt or plastic weatherstripping available at hardware stores should be used to weatherstrip window and door openings.
- Self-closing door hardware should be installed.
- Cracks and holes in walls, foundations and the roof should be caulked and sealed.
- Exterior paint should be maintained in good condition.
- Mortar joints should be checked to be sure they are tight.
- Chimney flue leaks should be sealed and fireplace inserts installed.
- Exterior walls should be plugged where wires enter the building.
- Insulated electrical plates should be installed on exterior walls.
- A vestibule or partition may be installed at the front door to block drafts and create an insulating air-lock.

Energy Conservation



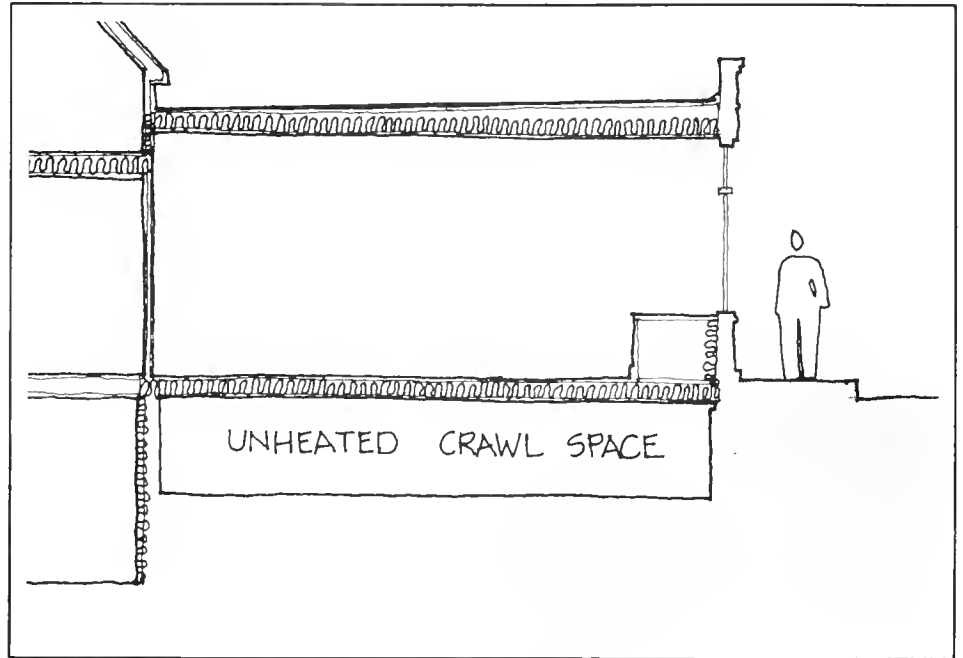
Reduce Heat Loss at Doors and Windows

Conduction occurs when heat or cold passes through building materials such as wood, metal or glass. As much heat is lost through conduction at glass doors and windows as is lost through infiltration.

When a second layer of glass is added, the trapped air acts as insulation. For this reason storm windows can reduce heat loss.

There are other ways of reducing heat loss through conduction:

- The window display area can be separated from the store interior by an inside window or partition.
- Thermal glass or double or triple glazing should be used for new exterior windows.
- Window shutters — doors that fit into the window frame — can be installed to block five times the heat loss of glass.
- Quilts — thick curtains that block three times the heat loss of glass — can be installed.
- A piece of styrofoam can be placed inside the frame of unused doors and windows.



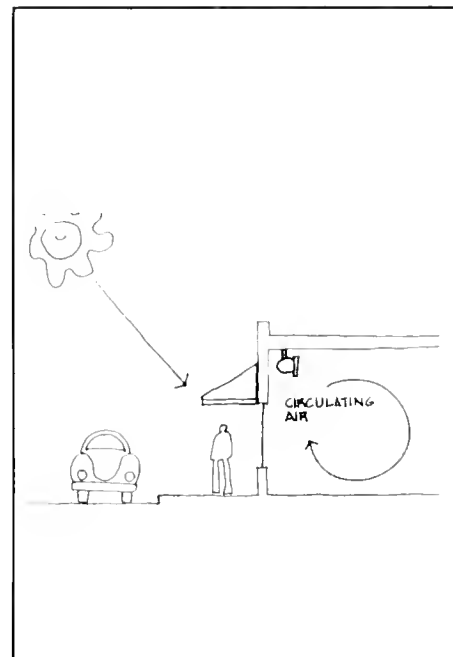
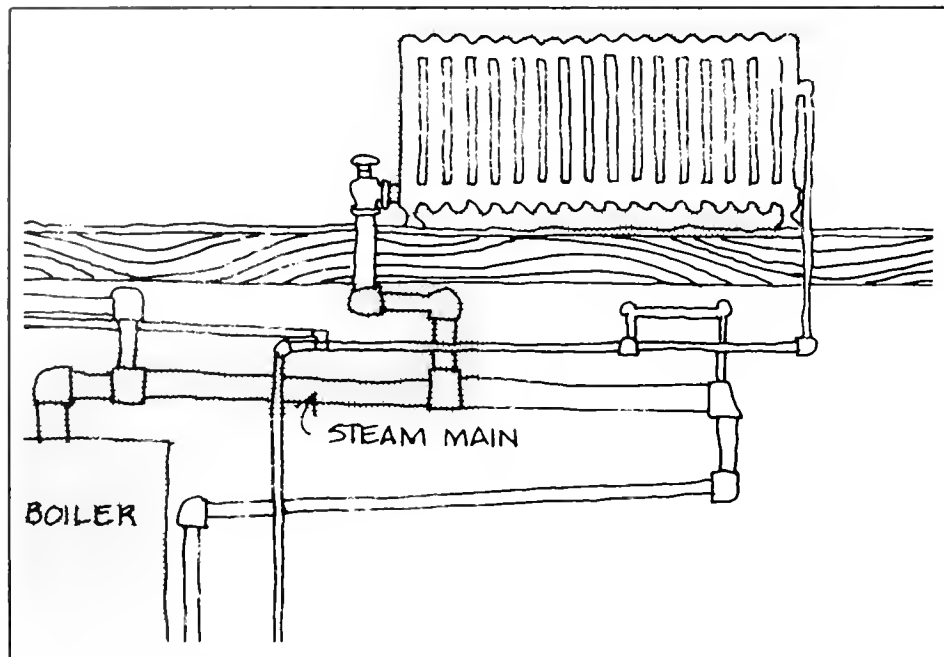
Reduce Heat Loss at Walls and Floors

A substantial amount of heat loss in most buildings occurs by conduction through walls, floors and ceilings. Good insulation can effectively inhibit much of this heat loss, by reducing heat flow and by blocking air motion at its origination point.

Insulation is measured in terms of its R value — the R value stands for resistance to heat flow. The greater the R value, the greater the resistance. When shopping for insulation, compare the total installed R values of different materials against your own building construction. In addition, insulation comes in various forms. Batt and blanket insulation is fitted between exposed studs or joists. Loose fill can be either blown or poured in through holes when the building frame is covered. Urea-based foams are poured into wall cavities by special machines, and must be handled by specially trained installers. Rigid board insulation is fastened directly to the building on the inside or outside, and then covered with sheathing or wallboard. Spray-applied insulation is well-suited to irregular spaces or shapes. Within a building several types of insulation will probably be appropriate, depending on the different construction conditions.

- All exterior surfaces should be insulated.
- Vapor barrier should be installed on grade below a crawl space to keep the earth's moisture off the structure.
- Vapor barrier should be installed between interior space and insulation to prevent moisture from collecting in the building frame.
- The attic or roof should be vented above insulation.
- The crawl space should be vented below insulation.

Energy Conservation



18 Reduce Heat Gain Using Your Equipment

Make the most of your building's equipment in planning for energy conservation. Many heat-producing appliances can be used to warm a room in winter and can be vented to remove heat in summer. Take a look at your building's mechanical equipment to check for efficiency.

- Walls behind radiators and machinery should be insulated to keep heat from leaving the room. Foil reflects heat back into the room.
- Pipes and ductwork to a room should be wrapped to reduce heat loss.
- Fans should be used to send heat where you want it — a ceiling-mounted fan will return heat to floor level.
- The furnace should be cleaned or replaced with a more efficient model.
- Gas appliances without pilot lights should be used, or use an igniter and turn off the pilot light when not in use.
- A timer should be installed on the thermostat to keep heat low at night.
- Daily temperatures should be kept at 68°F rather than 72°F.
- A small wall-mounted instant hot water heater should be used rather than a large central boiler for a shop with minimal plumbing needs.

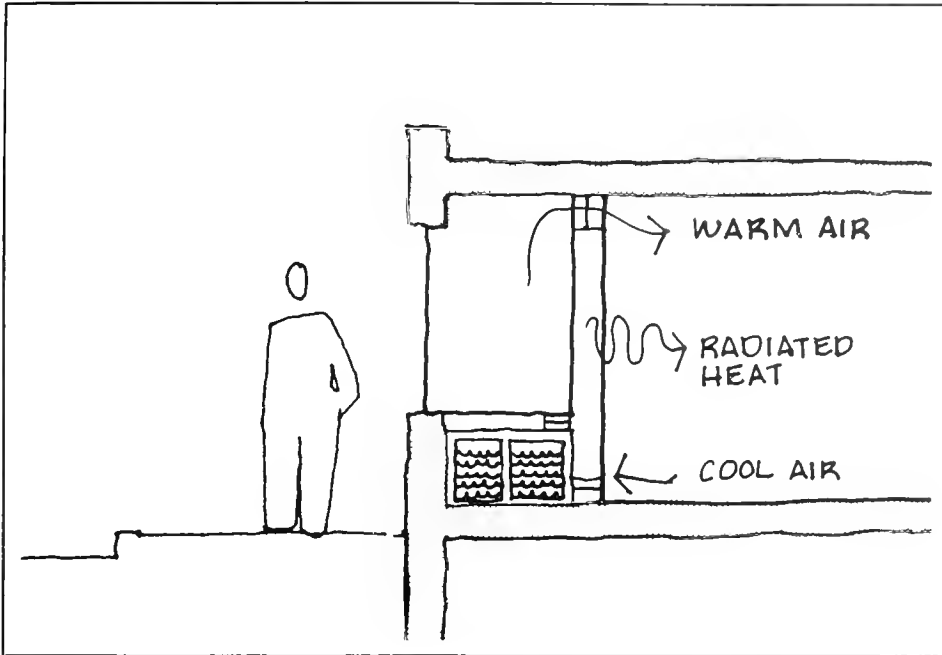
- Low volume faucet aerators can be used to save up to 60% of hot water fuel and water costs.
- Toilet tank water savers can be installed to cut up to 20% of a building's total water consumption.

Summer Cooling

In this part of the country keeping out the cold in winter is more costly than keeping it in during the summer. Yet the lessons for winter translate directly to summer. In summer the idea is to keep the sun out. You have to know where the sunlight falls naturally in order to know where to block it most effectively. Once sun has gotten into the building the heating has begun, but shades can be used to contain it at the window area.

- South windows should be shaded 100%.
- Awnings may be installed on the outside wall to keep sunlight from coming in windows (the depth of the overhang should equal the height of the window divided by 2.5).
- Deciduous trees may be planted to the south, allowing their leaves to create shade in summer. (Evergreen trees on north sides of a building block chilling winter winds.)
- Mylar-backed curtains may be used to reflect sunlight back into the street.
- Fans can be used to move warm air outside and to bring cooler air inside.
- Exterior walls may be insulated for summer cooling.

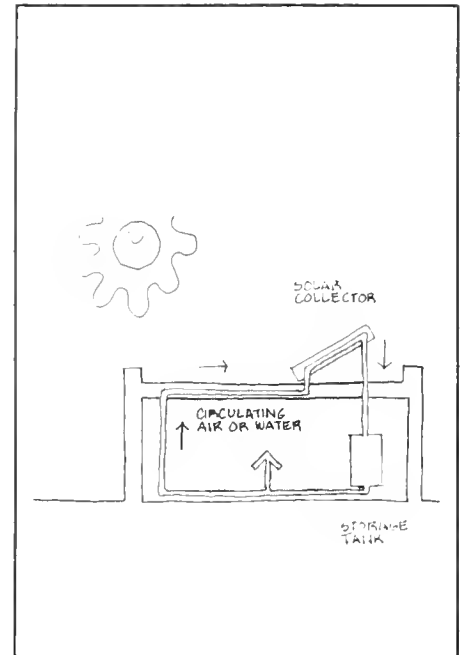
Energy Conservation



Heat Gain

Conserving energy really means making the building function more efficiently. The building can be altered to gain and retain heat, with a little knowledge of how sunlight falls on surfaces. Brick and concrete walls offer an excellent opportunity to hold heat. The idea is to have a large body of "thermal mass" directly in sunlight for as long as possible.

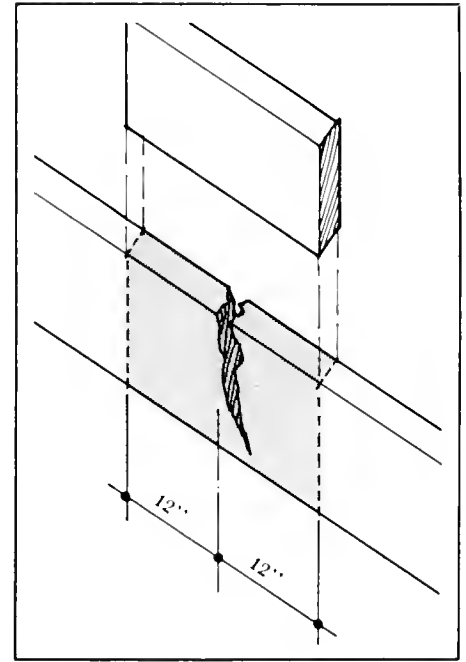
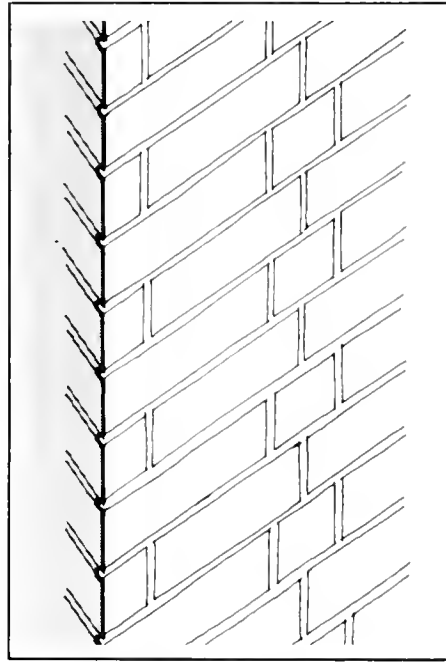
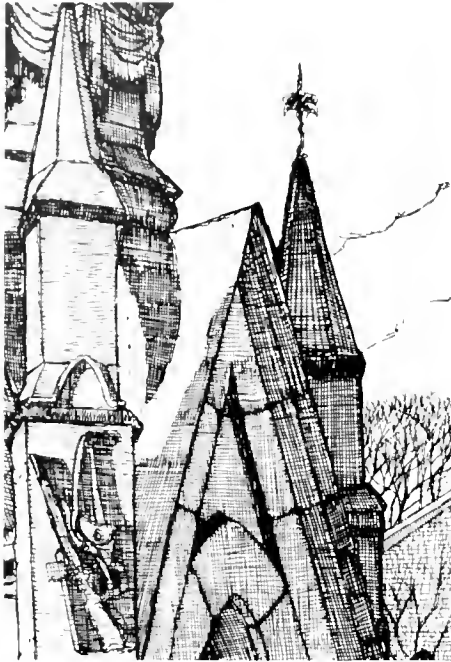
- Windows on the north side which receive very little sun should be minimized.
- Large expanses of glass should be used on the south side, letting as much sun as possible cover them in the winter, preferably 100%.
- The thermal mass of your building should be used to increase heat gain. Move furniture to bring sunlight onto a concrete slab floor or masonry wall.
- A thermal mass can be built into the storefront by using masonry construction for new walls and floors behind the display area.
- Thermal mass can be painted dark to absorb radiation.



Solar Potential

Many of the previous ideas are part of a *passive* solar heating program. An energy audit for a building may include an evaluation of its solar potential as well. An *active* solar heating system would include solar collectors mounted on a roof to provide warm air and water for the building's use. While many commercial solar collectors are not yet cost-effective for a small shop, a larger building or group of stores may find them worthwhile and economical. Small domestic collectors can also be used to provide hot water for businesses.

Materials and Methods



Brick and Masonry

Wood Frame

The series of drawings and explanations which follow will examine building materials and other elements that determine the character of the Centre Street business district. These descriptions detail acceptable methods of repairing and using these materials and contain suggestions for making visually and economically successful improvements.

The following building materials are not considered appropriate under the design guidelines for Centre Street:

- Asbestos Shingles
- Permastone (Artificial Stone)
- Unpainted or Exposed Concrete Block on Street Facades
- Plastic Glazing Materials

Brick is a common building material throughout the Centre Street business district. As a fireproof, low maintenance material, it became the obvious choice for commercial and civic structures from the later 1800's to the present time.

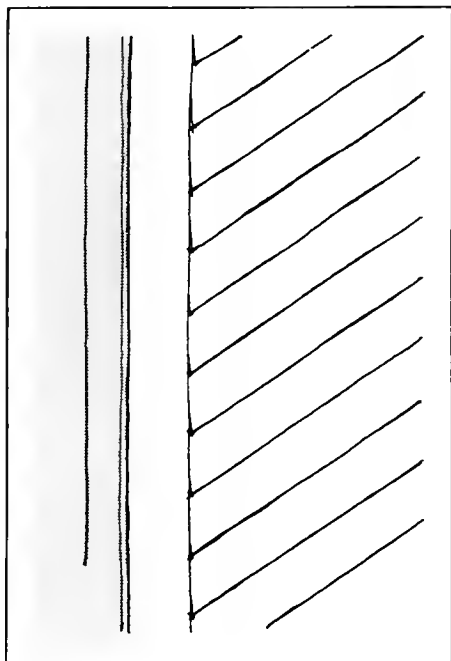
Brick and masonry maintenance consists mainly of cleaning and periodic repointing. Cleaning can be accomplished through the use of detergents, diluted acids or steam cleaning. Sandblasting or high pressure water cleaning of masonry and stone is not an accepted practice due to the damage that results. Repointing consists of removing the deteriorated outer layer of mortar to a depth of 1/2" - 3/4", and resealing the joint with new mortar that matches the original in color and texture (masonry mortar must be used and not portland cement mortar which becomes too hard). As a preventative measure it is important to maintain gutters and downspouts to keep excessive water from masonry walls.

It is common for brick to be painted and in most cases it would be impossible to return painted brick to its natural color. Previously painted brick should be repainted in colors that complement other facade improvements and the surrounding streetscape. Unpainted brick should generally be maintained as such.

Commercial buildings on Centre Street are rarely completely constructed of wood. However, most trim and interior construction is wood frame, and residences that have been converted into commercial structures sometimes retain this type of construction. Wood buildings are the easiest to maintain as most repair work involves nothing more than replacing defective material. The most common problems are the deterioration of the structural frame and other wooden members, and moisture penetration through exterior walls.

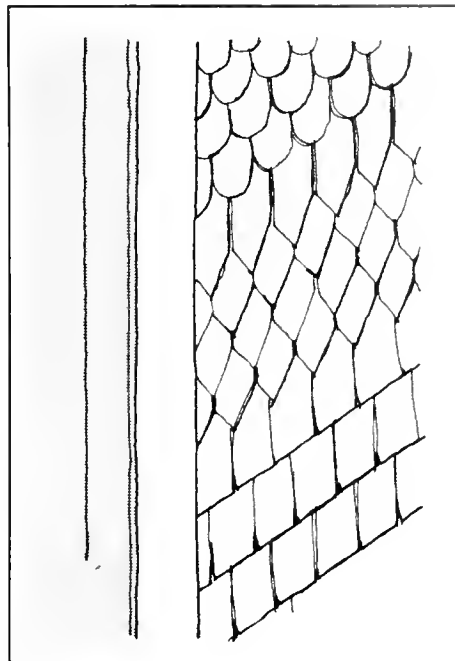
Structural members and other frame pieces infected with rot should be removed and replaced with a new piece of similar dimension. If only a section has been infected, the rotted section should be cut out at least twelve inches (12") beyond the damaged area, and repaired. Complex trim details can be reconstructed through the use of stock pieces of trim and blocking.

Materials and Methods



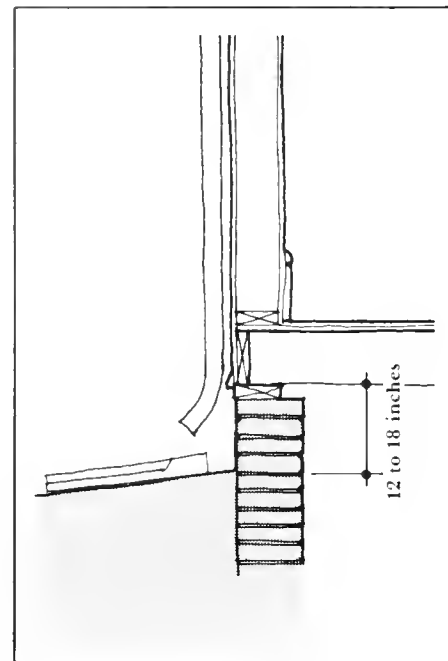
Clapboards

Wooden clapboards are the standard building material for most nonmasonry commercial structures. Resurfacing these buildings with other materials will usually not be as attractive as the repair and maintenance of the original material. When residing a building, the use of wooden or synthetic (aluminum and vinyl) clapboards is an important decision — the advantages and disadvantages of each should be closely compared. While wooden clapboards are the preferred alternative, the use of vinyl or aluminum replacements is not prohibited under these guidelines. However, these new materials must match the details of the original materials in the width of the siding, the width and depth of trim at corners and openings, and in the general application. The use of these and any materials to cover up original building detailing, decoration, and other trim, or the vertical application of horizontal clapboards is not an acceptable approach for rehabilitation.



Shingles

Wooden shingles left to weather, or periodically stained, are one of the most maintenance-free materials available. As with other siding materials, repairs and renovations must respect the original detailing — corner boards, trim at openings or the beveled corner. Shingled buildings often have a varied appearance of patterns and textures which must be preserved. Asphalt shingles for wall surfaces are not allowed under these guidelines; they should not be newly installed under any circumstances and should be removed when at all possible, circumstances and should be removed when at all possible.

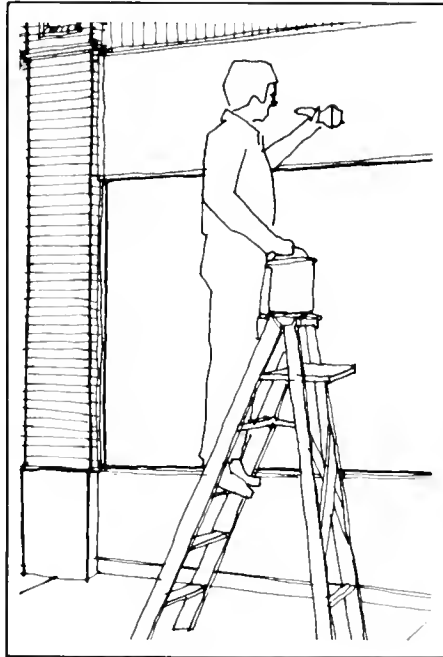
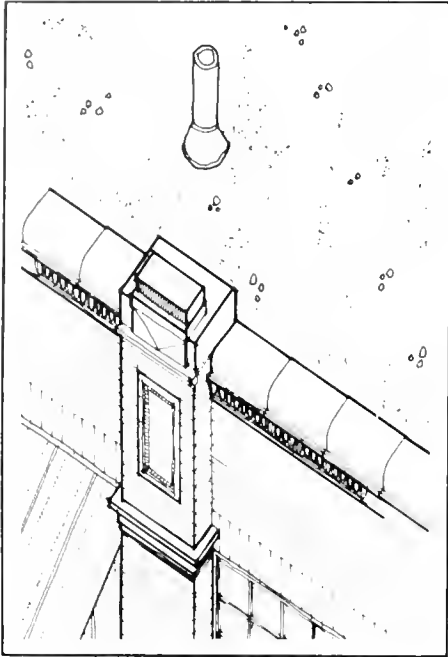


Moisture Protection

Moisture penetration usually occurs through the basement floor and foundation walls, through improperly flashed exterior joints and through a leaking roof. These conditions should be repaired and patched. Additionally, moisture in the ground naturally seeks the warmer, dryer conditions of most basements, and moisture penetration through the basement floor and foundation walls is unavoidable; however, it can be controlled.

Providing adequate ventilation in a basement, and allowing twelve to eighteen inches between wooden construction and the ground, will facilitate evaporation and control moisture condensation in the building. Drains around the exterior foundation and in the basement will remove excessive ground water.

Materials and Methods



22 Roofing

The roof protects a building from the elements and water damage. Leaks often do not show until substantial damage has already occurred. Most roofing will last about twenty years but should be periodically checked for damage, holes and cracks. Most commercial structures have flat roofs that are not visible from the street. These are usually built up roofs of hot tar, asphalt paper and crushed stone.

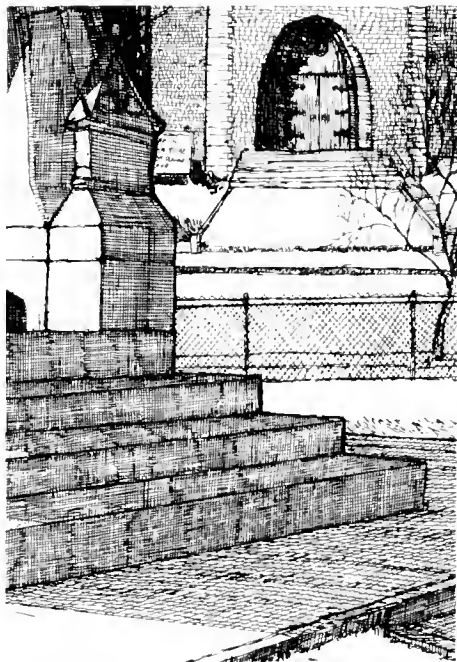
Some commercial structures may still have their original shingles, sheet metal or slate roofs. Current costs and building practices make the duplication of these materials prohibitive. In many cases it is not necessary to replace the entire roof, individual pieces and areas can be patched or replaced. In roofs that are visible, patching should match the existing materials.

Painting

Painting is one of the most common maintenance procedures in the care and improvement of commercial properties. New types of paint have made this task easier, but there is more to an attractive and thorough painting job than a new coat of paint. The following points should be considered when painting or repainting:

- Old paint should be removed if it's peeling or badly cracked. Sanding, chemical removers and burning with a propane torch are three common methods for removing paint from wooden surfaces.
- The surface to be painted should be primed with a minimum of one coat. Do not mix oil-base and latex paints.
- Paints should be selected carefully. Choose a good quality paint, and consider primer and finish coat together. It is safest to purchase the same brand of primer and finish paint.
- The surface should be thoroughly prepared before painting — caulk all joints and clean the surface dirt and other loose material.
- Painting should not take place in direct sunlight, when the temperature is below 40°F or if the weather may turn to rain.

Design Construction Process



The Architect

The most common use of an architect is in preparing a set of plans to be followed during construction or renovation. However, involving an architect throughout a project increases the likelihood that it will be done well. The following is a range of services that an architect can provide:

- Analyze the problem.
- Sketch a few alternate solutions.
- Investigate alternative materials, methods of construction and costs.
- Prepare final detailed construction drawings.
- Supervise construction.

Codes

There are codes to regulate all renovation work: zoning codes, the Boston Sign Code, building code, etc. Contact your local building inspector through the Building Department in Boston City Hall.

Permits

In general, a registered contractor will take responsibility for procuring a building permit. Special permits may be required for building alterations which do not conform to the local zoning codes. Contact your building inspector if you have any questions on your building renovation.

The General Contractor

Certain repairs and maintenance plans can be accomplished by a merchant and property owner. However, when plans and designs call for extensive work it is appropriate to hire a contractor to manage the job and see that all work is completed either by the contractor's company or through sub-contractors. A general contractor will give a cost estimate for the entire construction process, from start to finish, and will be responsible for obtaining the necessary permits and approvals, and for insuring that the construction meets all building codes.

Before a contractor is contacted, it is important to decide on the work to be completed and the materials to be used. This is best done in consultation with an architect who will help you develop a set of renovation plans.

In choosing a contractor, it is best to do so on the basis of past performance and referral. Therefore, you should ask for the names of recent clients and, if possible, follow up with a phone call and an inspection of the work. When a list of contractors has been gathered (a minimum of three contractors), they should be contacted and asked to make a visit to the store or building. The contractor should then be given an exact explanation of the work to be completed. Each contractor should be asked the following questions:

- When can the work begin?
- How long it will take?
- What will the total cost be?
- What guarantees are provided?
- What should the method and schedule of payment be?

Each contractor should be asked for a firm, written estimate of the total projected cost after making a site visit. These estimates should contain a specific description of the work to be done and the kind and quantity of materials which will be used.

When the contractors have all submitted bids, it is time to select one to complete the work. Competitive bidding will save money, but often the least expensive bid is not the wisest choice. Before making the final decision the following points should be considered in addition to the total price:

- Does the contractor have a legitimate work address and license?
- Does he carry Workman's Compensation for employees?
- Does he have liability insurance to cover injury to pedestrians or customers as work proceeds?

- Will he give a guarantee on the work? A guarantee should be demanded and included in the final contract.
- Does he have a good record with the Better Business Bureau (482-9151) or the Boston Consumer's Council (725-3320)?

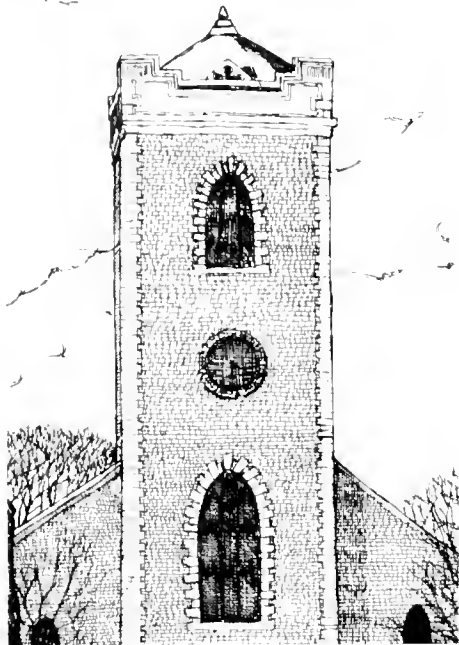
After a contractor has been selected, he should submit a written contract based on the estimate. The following items must be included before it is signed:

- The name, address, phone number and trade license number of the contractor.
- The contractor's signature.
- The name and address of the store or property owner and the name and address of the site of the work.
- The date of the contract.
- The starting date and completion date of the work.
- A detailed statement of the work to be completed and the materials to be used.
- The total price of the intended work and the terms of payment for the work.
- A provision requiring written approval for changes.
- A guarantee with clear terms covering all promised items.
- Provision for public liability insurance and Workman's Compensation.
- A clause protecting the owner against liens by sub-contractors.
- Provision for the removal of debris and an overall cleanup after completion of work.
- Requirement for the contractor to obtain all necessary permits.

While the work to be completed may seem small, it is necessary to have a formal contract for work. A contract promises protection and proof should problems arise.



Glossary of Terms



24

Bay

The section of a plan or building between adjacent columns or piers. The vertical division of a building wall represented by one window or door opening and the surrounding wall.

Bracket

A small support, usually decorated, which projects from the face of a wall and supports projecting architectural elements such as cornices.

Cornice

The upper-most division of an entablature. A horizontal, projecting molding along the top of a wall.

Course

A horizontal row of stones or bricks in a wall.

Facade

The main elevation or front of a building.

Fascia

A flat band on the face of a building, below the cornice and eaves.

Flashing

Sheet metal placed between abutting surfaces to prevent the entry of water.

Jamb

The side of a window or door opening against which the window sash or door shuts.

Lintel

A horizontal member spanning a rectangular opening.

Mullion

A vertical divider between a series of window and door openings.

Muntins

The horizontal and vertical bars in a window which separate the panes of glass.

Parapet

A low wall along the edge of a roof.

Pediment

A gable in which the roof cornice returns horizontally across the wall to form an enclosed triangle.

Pier

A solid masonry support.

Pilaster

A flat representation of a column projecting from a wall.

Scale

The size relationship of a person to their surroundings.

Sill

The horizontal member directly on top of the foundation wall which supports the exterior wall studs. The bottom cross piece of a window or door frame.

Transom

A narrow, rectangular window above a door, hinged for ventilation.

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